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Evaluate clinical guideline related to care of mothers with cesarean section. Its effect on nurses' practical skills

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Abstract

Background: Nurses had play a multidisciplinary role as a direct care provider who must provide competent nursing care based upon evidence base research finding for mothers with cesarean section. **Aim:** evaluate clinical guideline related to care of mothers with cesarean section, its effect on nursing practical skills. **Setting:** the study was conducted at 6 in patient units' maternity hospital Ain Shams University. **Study Design:** a quasi-experimental study design *(pre -posttest)*. **Sampling** purposive sample included 38 nurses**. Tools of data collection:** were structured interviewing Arabic Questionnaire Sheet, an observational checklist and nurse satisfaction assessment sheet. **Results:** evaluate clinical guideline related to care of mothers with cesarean section, its effect on nursing practical skills. **Conclusion:** there were statistical significant improvement among studied sample post intervention compared to pre intervention related to their knowledge & practice regarding to cesarean section. **Recommendations:** Periodic in service – clinical guideline regarding cesarean section care**.**

Key wards: clinical guideline, cesarean section, nurses practical skills.

Introduction:

Cesarean section (CS) is an important lifesaving operation when vaginal delivery might pose a risk to a mother or baby. However, if not medically indicated or if performed under suboptimal conditions, CS can cause maternal and fetal complications, including death. According to the ***World Health Organization (2015),*** at the population level, CS rates higher than 10 percent are not associated with reductions in maternal and newborn mortality rates.

In Egypt, the past decade has witnessed a sharp increase in the prevalence of CS with the most recent Egypt Demographic and Health Survey ***(EDHS)*** documenting a CS rate of 52 percent, which suggested that cesarean delivery might be overused or used for inappropriate indications. (***Avery l., 2018).***Additionally Accepted medical reasons for performing a CS included: failure of labor to progress, pelvic abnormalities, problems with the placenta, multiple gestation pregnancy, active herpes simplex, non-reassuring fetal heart rate, mal presentation of the fetus, and any serious medical condition that requires emergency treatment .If a CS is performed for any other reason, then it is considered none medically indicated and thus avoidable ***(Torloni, 2018).***

Nurses should provide competent nursing care during early (immediate) postpartum period. This critical time requires nurses to be open-mindedness and patient. This skill set requires that nurses should perceive that the first 2 hours after CS are of significant concern. Thus, they should provide competent care to postpartum women taking into considerations their beliefs, experiences and environment and respecting their human rights and dignity. Thus, the nurse should focus on supporting, protecting, advocating and empowering women during this time ***(Kyle, 2017).***

Moreover Nurses had play a multidisplinary role as a direct care provider who must provide competent nursing care based upon evidence base research finding for mothers with CS, as health educator and counselor must correct women misconceptions & believes related to CS also prevent un health women behavior as FGM & eating health nutrients during post natal care as well as exercise , encourage utilization of family planning services while nurses as administrator must design & implement protocols & programs for mothers with CS as well as formulate evaluation system for those mothers while nurses as a researcher must participate in data collection for implementing evidenced based research ***(Ponsane, 2017).***

Furthermore, **Beucher** has defined the Nursing guideline as a comprehensive document providing resources necessary for the support of the evidence-based nursing practice, the document needs to be reviewed and applied based on the specific needs of the organization or practice setting as well as the needs & wishes of the patient. guidelines used as a tool to assist in decision making for individualized patient care as well as ensuring that appropriate structures & support are in place to provide the best possible care. ***(Beucher, 2013).***

Clinical guidelines in nursing have been shown to improve the performance of nurses through enhancing knowledge & practical skills and to promote the

delivery of high-quality, evidence-based health care. Practice guidelines have the potential to improve the process of care as well as patient outcomes. ***(Lopez,2013)***

Justification of the problem:

It was estimated by Ain Shams Maternity University Hospital statistical that cesarean section was 6488 cases among Births that had been conducted ***(Statistic Office Maternity Hospital, 2018).***

Cesarean section was a nursing concern because nurses had played a multidispnary role as a direct care provider who assess patient needs and implement competent patient care according to patient priorities of need while nurse as a manager follow hospitals roles and regulations to monitor nurses compliance with competent care provided with cesarean section as provide safety & comfort measures, infection control measures. Design (implement protocol standards and program to enhance nurses practices for women with cesarean section while nursing as a counselor must correct misconception and beliefs for mothers with cesarean section.

Furthermore, nurses as a researcher must utilize advanced and best evidence research findings as a base while providing her competent patient care with cesarean section. This consequently was reflected upon reducing maternal fetal neonatal mortality, morbidity. This aim to implementing clinical guideline about care of mothers with CS to improve nurses knowledge & practices.

Aim of the Study:

The current study aimed to evaluate clinical guidelines related to the care of mothers with caesarean section. Its effect on nurses' practical skills.

Research Study hypothesis:

The clinical nursing guideline about care provided for mother with cesarean section will expected to enhance nurses' knowledge and their practical skills.

Subjects and Methods

I. Technical design

The technical design for this study included research setting, research design, and subjects of the study and tools of data collection.

Study design, setting & sampling:

Design: A quasi-experimental study was used to evaluate clinical guidelines related to the care of mothers with caesarean section. Its effect on nurses' practical skills.

Setting: The study conducted at six departments (inpatient) at the rooms devoted for cesarean birth care at in Ain Shams University maternal hospital. **Sample:** purposive sample of 38 nurses attended at inpatient units at Ain Shams University maternity hospital for 12 months were included in the study according to

the following criteria**:** Different age group, different nursing education, Nurses who provide direct patient care for mothers with cesarean section.

Tools of data collection:

I. ***Structured Arabic Questionnaire***. The tool will included 37 multiple choice question as well as an open and close-ended questions. It was divided into two parts: ***First part*** was designed to assess nurses' general characteristics (age, educational level…). ***Second part*** to assess nurse's knowledge regarding care of women with cesarean section.

Each question scored as two for correct knowledge and scored one for incorrect knowledge. The total knowledge score was calculated as the following:

Equal or more than 60% correct knowledge while less than 60% was consider incorrect knowledge.

II. ***An Observational checklist*** It was adopted from Adel, 2013 and modified by the researcher to assess nurses practices while providing nursing care for mothers with cesarean section which included the following (pre cesarean section care/immediate nurse role within 2 hours/ routine daily care till discharge) considering infection control measures, ethical issue during provided care for cesarean section. It consisted of 59 items. It was consisted of three parts.

Part 1: it was designed to evaluate nursing practical skill pre caesarean section.

Part 2: to evaluate immediate nursing practical skills within 2 hours post caesarean section

Part 3: it was designed to evaluate nurses' practical skills during daily routine care for mothers with caesarean section.

Practices Scoring system:

Each item in the observational checklist scored as two for correct practice items and 1 for incorrect.

The total practices correct score consider as the following: Equal or more than 60% correct practice while less than 60% was consider incorrect practice.

III. ***Nurse satisfaction assessment sheet (ACCA magazine, 2012):*** It was adopted from ACCA's magazine, (2012) to assess nurses satisfaction regard a supportive instructional guideline post intervention. Regarding the implementing guideline which was included 12 statements; which each nurse response satisfied, dissatisfied and uncertainly satisfied.

Nurse satisfaction were evaluated as 2 scores for satisfied and 1 score for dissatisfied and uncertainly satisfied, regarding nurses satisfaction were calculated as more than 60% satisfied while less than 60% were dissatisfied and uncertainly.

An instructional supportive guideline:

It was designed by the researcher based on recent literature review and nurses learning needs to enhance nurses knowledge and practices for care of mothers with cesarean section which was translated to Arabic language with different illustrative pictures in order to facilitate teaching process.it including 2 parts (first part included definition of cesarean section, causes, types and complications) (second part included nursing care pre, immediate, daily routine for cesarean section).

Validity and reliability:

All tools of data collections were sent to three specialized university professor according to their comments modifications were considered. Validity and Reliability were done by Cronbach's Alpha coefficient test (first tool 0.799) (second tool 0.802) (third tool 0.813).

Ethical considerations:

The study did not touch nurses' dignity, culture, religious and ethical issues.

The researcher explained the aim of the study to the participants.

The researcher obtained written consent from each participant.

After statistical analysis all tools of data collection will be burned to maintain confidentiality of the study.

Each participant has the right to be excluded from the study at any phase.

During implementation human rights will be kept for nurses.

Data collection was for research only and it burned after data analysis.

II. Operational Design:

The study passed through the following phases: The preparatory phase, the implementation phase, and the evaluation phase.

Phase 1 (Preparatory phase):

The researcher had reviewed advanced international & national related literature then designed tools of data collection, finally conduct pilot study.

Pilot study: A pilot study carried out on 4 nurses and was excluded from the main study sample. Its aim was to evaluate the content predictability, clarity, validity and reliability of the tools of the study. It also helped in the estimation of the time needed to fill in the forms. According to the statistical analysis modifications were considered. Modifications included rephrasing of some questions sequences, and reduce numbers of questions from 105 to 96 questions, after refinement and modifications; the final form of the tool was utilized.

Phase 2 (The implementation phase):

Fieldwork:

The data was collected through a 12 months from September 2018 till September 2019.

The researcher visited the previously mentioned setting three times per week started from 9 am-3 pm. The researcher reviewed hospital registration book and selected 4 nurses per day according to their attendance in the inpatient departments.

at the beginning of the interview the researcher introduced herself to each nurse and great them, then the aim of the study was explained to participants, then the oral consent was obtained.

The researcher started to fill the interviewing questionnaire to assess nurse's general characteristics then the nurse knowledge regarding cesarean section care; it took about 20-25 minutes to fill the question by using tool 1.

Secondly then, the researcher assessed the nurse practice toward care of mothers with cesarean section. By using tool 2 applied to assess nurses' care to mother's with cesarean section (pre- immediate /daily routine). After the completion of the interviewing questionnaire was statistical analysis (the nurses learning needs was identified accordingly nurse guideline was designed (implemented through 12 sessions). A clinical guideline designed by the researcher was distributed among nurses

The researcher assessed nurse's knowledge, practice regarding clinical guideline immediate after all sessions and after one month later.

The clinical guideline was implemented through sessions, including four theoretical & eight practical sessions the number of participant for each session 4 nurses. The duration of each session is about 20 minutes. The teaching methods were bed side teaching, group discussion & role play and media was lap top, pictures, model of female mother & neonate.

First session included (introduction, definition, and causes of cesarean section, types, and complications of cesarean section)

Second session included (nursing care pre cesarean section- nursing care post immediate cesarean section), Third session included (daily routine care post caesarean section), fourth session included (health teaching and discharge instruction for mothers with caesarean section).

The practical sessions included eight sessions, first session included (wound care), second session included (pain assessment) third session included (breast care and positions to feed neonate) fourth session included (neonate care) fifth (breathing exercise) six session included (leg exercises) while the 7th and 8th session included (nursing care of all complications from CS)

Each day 4 nurses were interviewed then their practices were evaluated while they provided care for mothers with cesarean birth. Each day one session was implemented. All days of feasts /public holidays were excluded.

Phase 3 (evaluation phase):

The previous study tools were utilized pre intervention then immediately post intervention then one month post intervention but nurse satisfaction tools regarding implementation guideline were assessed one month post intervention.

III. Administrative Design:

An official approval obtained from the Maternal & Neonatal Health Nursing department counsels & the Scientific Research Ethical Committee that approved by the Faculty of Nursing, Ain Shams University Counsel. Also a letter containing the title and aim of the study directed to the director of Ain Shams Maternity University Hospital to obtain his approval for data collection.

IV. Statistical Design:

The collected data coded, organized, analyzed and tabulated using computer. Presentation of data in to tables and graphs will be carried out according to the types of variable

The statistical analysis of data was done by using excel program and the statistical package for social science (SPSS) program version 12. First part of data was a descriptive one which was revised, coded, tabulated and statistically analyzed using the proportion and percentage, the arithmetic mean X and standard deviation (SD). The second part was analytical statistics to test statistical significant difference between two or more groups. For qualitative data, Chi square test X^2 and p-value were used to test associations among the variables. The Friedman test is a non-parametric statistical test developed by Milton Friedman; it is used to detect differences in treatments across multiple test attempts. The correlation coefficient is a statistical measure of the strength of the relationship between the relative movements of two variables.

Significance of results was:

- Non-significant if p-value > 0.05.
- Significant if p-value < 0.05.
- Highly significant if p-value < 0.001.

Limitations of the study:

1) Some of nurses refuse to participate due to work overload.
2) The researcher had to visit the same ward several times and wait long time to complete data collection because nurses were too busy.
3) Postpone interviewing questioner due to absence of nurses.

Results

Table (1): Frequency distribution among the studied sample according to their general characteristics (n=38).

Items	No	%
Age (Year)		
20-<30	9	23.7

30-<40	11	28.9
≥40	18	47.4
$\bar{x}$ S.D **40.5 ± 8.75**		
Area of Residence		
Rural	9	23.7
Urban	29	76.3
Educational level		
Diploma	26	68.4
Bachelor degree	9	23.7
Master degree	3	7.9
Years of Experience		
<5	9	23.7
5-<15	14	36.8
15-20	15	39.5
$\bar{x}$ S.D **16.4 ± 5.05**		
Attending training program on the care of women under cesarean section.		
Yes	8	21.1
No	30	78.9

Table (**1**) shows that (47.4%) among the studied sample their age ≥40 year. (76.3%) of the studied sample residing in urban areas. (68.4%) among the studied sample had diploma education. Also, (39.5%) among the studied sample their years of experience ranged between15-20 year. Moreover, (78.9%) among the studied sample didn't attended training courses about care of women with cesarean section.

Fig (1): Frequency distribution among the studied sample source of knowledge regarding caesarean section (n=38).

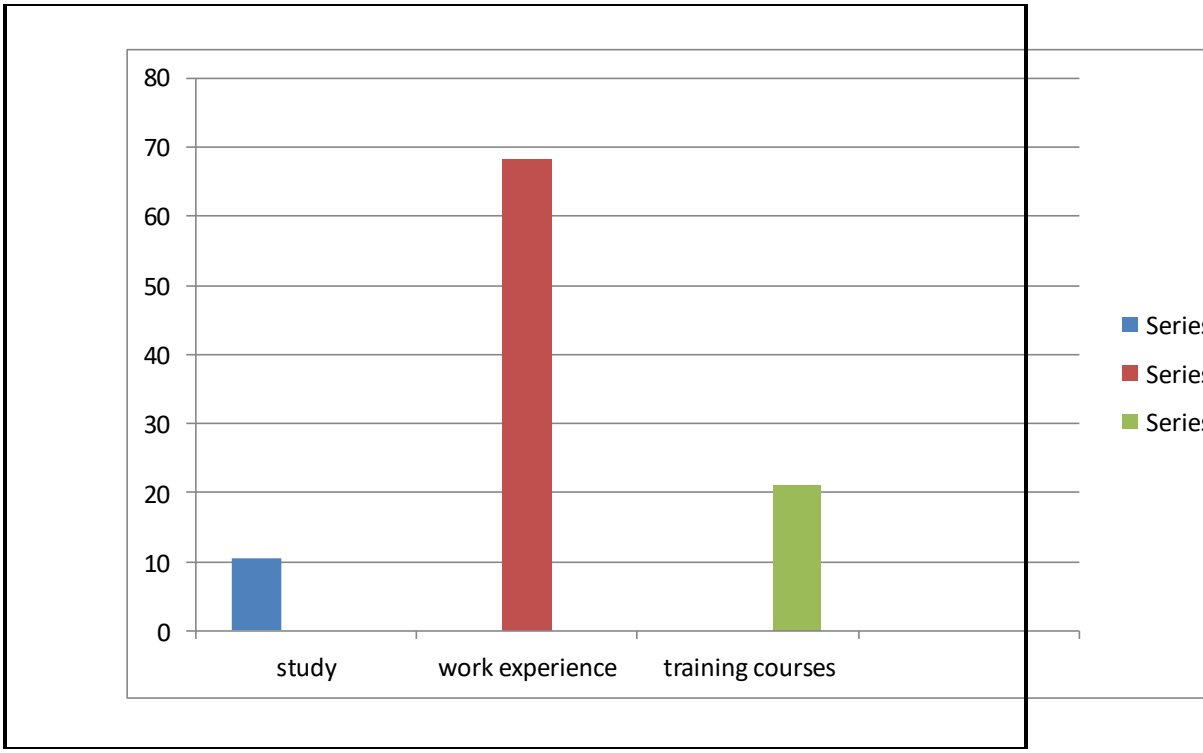

Table (2): Frequency distribution among to studied sample correct / in correct knowledge related to CS pre intervention compared to immediate post intervention and one month post intervention (n=38).

Items	Pre-intervention		Post-intervention		one month post intervention		Friedman test	
							X2	p-value
	No	%	No	%	No	%		
Definition of CS							25.12	.000**
Correct	17	44.7	33	86.8	31	81.6		
Incorrect	21	55.3	5	13.2	7	18.4		
reasons for CS.							21.97	.000**
Correct	18	47.4	35	92.1	32	84.2		
Incorrect	20	52.6	3	7.9	6	15.8		
Complications of CS							19.55	.001**
Correct	16	42.1	36	94.7	33	86.8		
Incorrect	22	57.9	2	5.3	5	13.2		

Table (2) shows that, there was a highly statistically significant regarding knowledge about the caesarean section of the studied sample pre compared post

intervention between pre, post and one month post intervention of clinical guidelines.

Table (3): Frequency distribution among the studied sample correct & incorrect knowledge regarding to care provided among mothers with caesarean section (pre intervention, immediately post intervention and one month post intervention) (n=38).

Items	Pre-intervention		Post-intervention		One month post intervention		Friedman test	
							X2	p-value
	No	%	No	%	No	%		
Nursing care pre CS.								
Correct	12	31.6	22	57.9	19	50	19.35	.002**
Incorrect	26	68.4	16	42.1	19	50		
Nursing care post CS.								
Correct	14	36.8	31	81.6	24	63.2	17.51	.004**
Incorrect	24	63.2	7	18.4	14	36.8		
Time to start oral fluids post CS:								
Correct	18	47.4	32	84.2	31	81.6	23.25	.000**
Incorrect	20	52.6	6	15.8	7	18.4		
The importance of oral fluids post CS.								
Correct	19	50	30	78.9	29	76.3	25.23	.000**
Incorrect	19	50	8	21.1	9	23.7		
Time to start feeding per mouth post CS for mother:								
Correct	17	44.7	32	84.2	32	84.2	27.25	.000**
Incorrect	21	55.3	6	15.8	6	15.8		
The importance of exclusive breast feeding post CS.								
Correct	15	44.7	31	81.6	30	78.9	20.27	.001**
Incorrect	23	55.3	7	18.4	8	21.1		
The importance of exclusive breast feeding for mothers post CS:								
Correct	18	47.4	30	78.9	26	68.4	18.21	.002**
Incorrect	20	52.6	8	21.1	12	31.6		
Time to start immediate suckling breastfeeding post CS:								
Correct	19	50	35	92.1	30	78.9	19.59	.002**
Incorrect	19	50	3	7.9	8	21.1		

Table (3) cont.: frequency distribution among the studied sample correct & incorrect knowledge regarding to care provided among mothers with caesarean section (pre intervention, immediately post intervention and one month post intervention) (n=38).

Items	Pre-intervention		Post-intervention		One month post intervention		Friedman test	
	No	%	No	%	No	%	X2	p-value
Importance of breast care after CS							17.57	.004**
Correct	23	60.5	35	92.1	30	78.9		
Incorrect	15	39.5	3	7.9	8	21.1		
The benefit of breast care							18.30	.002**
Correct	15	44.7	31	81.6	26	68.4		
Incorrect	23	55.3	7	18.4	12	31.6		
Time to start early ambulation post CS							20.94	.001**
Correct	12	31.6	24	63.2	22	57.9		
Incorrect	26	68.4	14	36.8	16	42.1		
The importance of early ambulation post CS.							19.30	.001**
Correct	18	47.4	31	81.6	28	73.7		
Incorrect	20	52.6	7	18.4	10	26.3		
The benefit of perineum hygiene post CS							29.93	.000**
Correct	22	57.9	33	86.8	33	86.8		
Incorrect	16	42.1	5	13.2	5	13.2		
The importance of perineum care post CS.							24.22	.000**
Correct	17	44.7	29	76.3	28	73.7		
Incorrect	21	55.3	9	23.7	10	26.3		
The importance of the wound care post CS							19.17	.002**
Correct	25	65.8	35	92.1	29	76.3		
Incorrect	13	34.2	3	7.9	9	23.7		
The importance of surgical site care after CS.							19.30	.001**
Correct	14	36.8	28	73.7	26	68.4		
Incorrect	24	63.2	10	26.3	12	31.6		
The causes of the CS wound infect.							30.13	.000**
Correct	18	47.4	32	84.2	31	81.6		
Incorrect	20	52.6	6	15.8	7	18.4		

Table (3) cont.: frequency distribution among the studied sample correct &incorrect knowledge regarding to care provided among mothers with caesarean section (pre intervention, immediately post intervention and one month post intervention) (n=38).

Items	Pre-intervention		Post-intervention		one month post intervention		Friedman test	
	No	%	No	%	No	%	X2	p-value
Signs & symptoms of CS incisional wound infection.								
Correct	17	44.7	32	84.2	32	84.2	33.28	.000**
Incorrect	21	55.3	6	15.8	6	15.8		
The importance of breathing exercises and legs exercises post CS								
Correct	18	47.4	32	84.2	28	73.7	18.30	.002**
Incorrect	20	52.6	6	15.8	10	26.3		
Mothers Warning signs post CS.								
Correct	15	39.5	31	81.6	30	78.9	31.55	.000**
Incorrect	23	60.5	7	18.4	8	21.1		
Neonatal Warning signs post CS.								
Correct	13	34.2	29	76.3	28	73.7	32.92	.000**
Incorrect	25	65.8	9	23.7	10	26.3		
Post CS woman proper & healthy position.								
Correct	12	31.6	24	63.2	22	57.9	25.68	.001**
Incorrect	26	68.4	14	36.8	16	42.1		
Woman mental health post CS.								
Correct	17	44.7	32	84.2	32	84.2	31.18	.000**
Incorrect	21	55.3	6	15.8	6	15.8		
Woman Sexual health post CS.								
Correct	10	26.3	27	71.1	25	65.8	24.78	.001**
Incorrect	28	73.7	11	28.9	13	34.2		
Hospital discharge instruction related to woman health								
Correct	14	36.8	28	73.7	26	68.4		
Incorrect	24	63.2	10	26.3	12	31.6	22.68	.001**
Hospital discharge instruction related to neonate health								
Correct	15	39.5	29	76.3	28	73.7	29.82	.000**
Incorrect	23	60.5	9	23.7	10	26.3		

Table (3) reveals that, there was a significant improvement in all items of knowledge related to nursing care for caesarean section of the studied sample post implementation of clinical guideline with highly statistically significant difference at (P= < 0.01) between pre, post and post one month implementation of clinical guideline

Practical skills about nursing care for caesarean section.

Fig (2): Frequency distribution among the studied sample pre, post and one month post intervention of clinical guidelines regarding to their total correct/incorrect practical skills about nursing care for caesarean section (n=38).

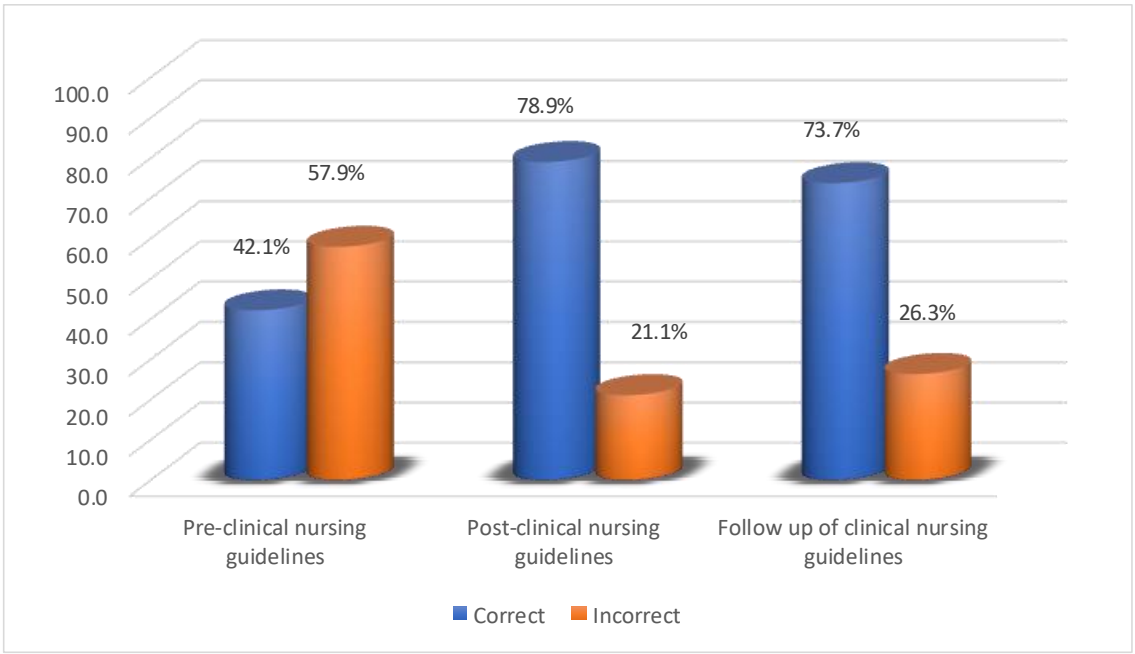

Fig (3): Frequency distribution among the studied sample regarding to their satisfaction about the implemented guidelines post intervention (n=38).

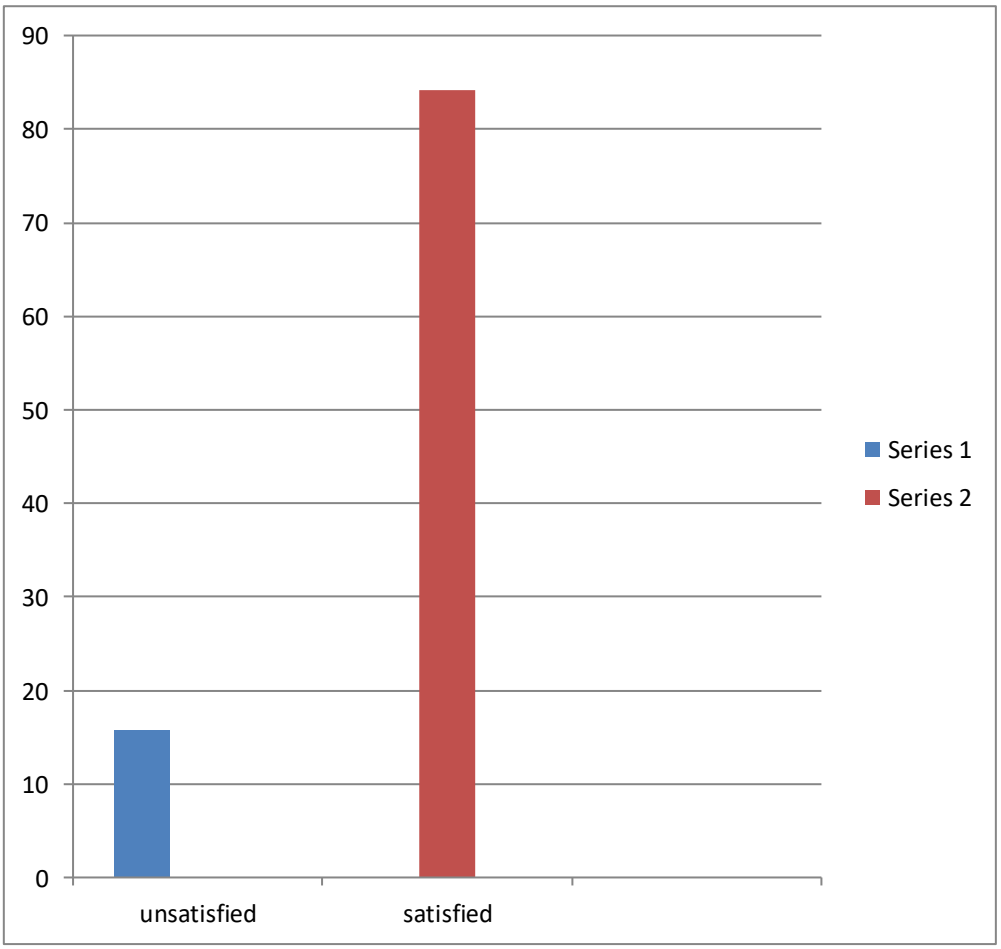

Table (4): Relation between general characteristics data of the studied sample and their total knowledge about nursing care for caesarean section

Items		Total knowledge about nursing care for caesarean section				X2	P-Value
		Correct (n=32)		Incorrect (n=6)			
		No	%	No	%		
Age (year)	20-<30	9	28.1	0	0.0	7.917	.019*
	30-<40	11	34.4	0	0.0		
	≥40	12	37.5	6	100		
Residence	Rural	8	25	1	16.7	2.211	.137
	Urban	24	75	5	83.3		
Education level	Diploma	20	62.5	6	100	9.58	.031*
	Bachelor degree	9	28.1	0	0.0		
	Master degree	3	9.4	0	0.0		
Years of Experience	<5	9	28.1	0	0.0	10.92	.004**
	5-<15	14	43.8	0	0.0		
	15-20	9	28.1	6	100		
Training courses.	Yes	8	25	0	0.0	1.230	0.168
	No	24	75	6	100		

***significant at p ‹ 0.05. **highly significant at p ‹ 0.01.**

Table (4) shows that, there was highly statistically significant relation between total knowledge about nursing care for caesarean section of the studied sample and their years of experience at (P= < 0.01). Also, there was statistically significant relation between total knowledge about nursing care for caesarean section of the studied sample and age and education level at (p= < 0.05). While, there was statistically insignificant relation between total knowledge about nursing care for caesarean section of the studied sample and residence, training courses at (p= > 0.05).

Table (5): Relation between general characteristics of the studied sample and their total practice about nursing care for caesarean section

Items		Total practice about nursing care for caesarean section				X2	P-Value
		Correct (n=30)		Incorrect (n=8)			
		No	%	No	%		
Age (year)	20-<30	9	30	0	0.0	11.25	.004**
	30-<40	11	36.7	0	0.0		
	≥40	10	33.3	8	100		
Residence	Rural	9	30	0	0.0	3.14	.076
	Urban	21	70	8	100		
Education level	Diploma	18	60	8	100	8.08	.031*
	Bachelor degree	9	30	0	0.0		
	Master degree	3	10	0	0.0		
Years of Experience	<5	9	30	0	0.0	15.53	.000**
	5-<15	14	46.7	0	0.0		
	15-20	7	23.3	8	100		
Attending training courses.	Yes	8	26.7	0	0.0	2.70	0.100
	No	22	73.3	8	100		

***significant at p ‹ 0.05. **highly significant at p ‹ 0.01.**

Table (5) shows that, there was highly statistically significant relation between total practice about nursing care for caesarean section of the studied sample and their age, years of experience at (P= < 0.01). Also, there was statistically significant relation between total practice about nursing care for caesarean section of the studied sample and education level at (p= < 0.05). While, there was statistically insignificant relation between total practice about nursing care for caesarean section of the studied sample and residence, training courses at (p= > 0.05).

Table (6): Correlation between total knowledge about nursing care for caesarean section, satisfaction about clinical guidelines of the studied sample and their total practice about nursing care for caesarean section at post of clinical guideline

Item	Total practice about nursing care for caesarean section		Satisfaction about clinical nursing guideline	
	r	P- value	r	P- value
Total knowledge about nursing care for caesarean section.	0.690	.000**	0.604	.000**
Total practice about nursing care for caesarean section	—	—	0.839	.000**

(*) Statistically significant at p<0.05.

Table (6) illustrate that, there was a positive correlation between total knowledge about nursing care for caesarean section, satisfaction about clinical guidelines of the studied sample and their total practice about nursing care for caesarean section at post of clinical guideline.

Discussion:

Cesarean section care is very important to mother to prevent occurrence of serious complications such as postpartum hemorrhage, infections. This period is used to make sure the mother is stable and to educate her care of her baby. Mothers are encouraged to ambulate and to eat a regular diet.

The World Health Organization ***(WHO, 2014)*** describes the postnatal period as the most critical and the most neglected phase in the lives of the mothers and their babies; most maternal and/or newborn deaths occur during the postnatal period so, it is vital to provide the nurses with a full knowledge and training for the management of this period. C-section arguably functions as a barrier to universal coverage with necessary health services. 'Excess' CS can therefore have important negative consequences for health equity both within and across countries.

Regarding general characteristics of the studied sample, the results of the current study revealed that more than one third among the studied sample their age ≥40 year. Regarding the age of the current study is higher than the group studied by ***(Elbnedari. H, 2021),*** who documented in her study, which was carried out in Al-Azhar university hospital, and El Zarka Central Hospital in Damietta Governorate which reveals that half of the studied nurses were in the age group of (20-30)years old. While this finding is similar to ***(Kaur et al., 2014)*** who found that the majority of the subjects were in the age group of 26-30 years. These differences may be due to the difference between general characteristics of the sample & setting.

Regarding to education & years of experience the findings of the present study revealed that More than two third among the studied sample had diploma education. Also, more than one third among the studied sample their years of experience ranged between15-20 year .this finding disagree with ***(Hashem et al., 2012)*** who found that less than two thirds had Bachelor science of nursing and forty percent of the subjects had experience of 6- 10 years. These differences may be due to the difference between general characteristics of the sample & setting.

Nurses' should be knowledgeable and highly skillful in providing nursing care according to mothers' needs and problems to save their lives, regarding training courses the results of the present study revealed that more than two third among the studied sample didn't attend training courses for the care of mothers under cesarean section. This was agree with ***(Hassan, 2016),*** mentioned that, almost all the studied sample didn't attend any in-service training program about the quality of postpartum nursing care. This result agrees with a study conducted by ***(Mohamed, 2016)*** who found that all of the studied sample didn't receive any training courses specialized in obstetrics.

This finding was dissimilar to ***(Belal et al., 2016)*** who found that more than half of the studied sample attended training courses about postpartum nursing care this may be related to the different characteristics of the study subjects.

Regarding to total knowledge score of the studied sample the current study finding revealed that slightly more than three quarter of them had incorrect knowledge regarding cesarean section before implementing the guideline.

This result was consistent with ***(Dibazari, 2017)*** found that staff nurses didn't have enough knowledge regarding cesarean section care. On the same line with(said,2009) add that the majority of nurses had incorrect knowledge regarding care of women with CS. Moreover the study of ***(Majd, 2017)*** reported that nurses were not knowledgeable enough to provide high level of care to women. This Lack of knowledge of the studied sample may be due to the fact that, maternity nurses did not receive the needed information or may be in need for refreshment in-service training program. Also, they are facing many difficulties in the area of mothers care, because most of health care settings are lacking standardized care guidelines.

This finding is in disagree with ***(Aschalew, 2016)*** who illustrated that about half of the study sample had good knowledge about CS care. This finding also is in congruent with ***(Shinde, 2015)*** who found that less than half of the staff nurses had knowledge regarding CS care. These finding are consistent with other study by ***(El-Seman, 2016)*** who also found inadequate knowledge of nurses in post CS management.

While there was highly statistical significant improvement in the total knowledge score level immediately and one month post clinical guideline implementation compared by pre intervention. This improvement may be due to continues education by using guideline the current study finding is congruent with

(Berhe et al., 2017) who mentioned that the educational sessions was effective in improving nurses' knowledge and performance related to cesarean section ..

Within the same line, ***(Kaushal, 2015)*** emphasizes the positive impact of an educational program on the knowledge and performance, hence, the healthcare organizations can engage in continuous training programs to regularly maintain and enhance the performance of the nurses.

However, one month later, the nurses' scores were somewhat reduced but still significant which may probably be due work overload.

Regarding source of knowledge the finding of this study revealed that more than two third among the studied sample had their knowledge about cesarean section care from their work experience this finding was dissimilar to other study was conducted at Obstetrics and Gynecology Teaching Hospital, Gezira State Sudan aimed at assessing nurses' knowledge regarding routine postpartum care at Obstetrics and Gynecology Teaching Hospital during the period of the study from January to March 2017showed that less than one third of the study sample their source of knowledge regarding routine postpartum care from mass-media less than one third of them their source from colleagues, less than one third from training program less than one third from books and references and more than one third from university. This may be due to the difference in facilities of hospital, knowledge and practices of nursing staff.

Regarding to total practice score of the studied sample the current study finding revealed that slightly more than two third of them had incorrect practice regarding cesarean section. This poor practice before implemented guideline might be due to lack of knowledge, and shortage in the number of nurses, shortage of necessary equipment and supplies while the finding is dissimilar to ***(Simbar et al., 2017)*** who study (assessment of quality of care in postpartum wards) which their study demonstrated that the quality of care was poor among (12.95%) of nurses regarding many of domains of postpartum care.

Moreover, working nurses didn't have the privilege of continuing educational program which can highly increase their knowledge and improve their skills. Lack of continuous supervision and annual evaluation of their performance, lack of motivation, absence of job specification plus shortage in staffing all lead to overlapping when it comes to providing some items of care and neglecting the others.

In addition, early discharge after delivery decreases the time needed to provide the instructions and advices necessary for parturient mothers. Last but not least, it cannot be ignored that working nurses are overloaded with administrative duties beside their duties as health care providers.

Related to the studied sample practice regarding care of CS the findings of the present study revealed that there were improvement of studied sample practice related to measuring vital signs post implemented guideline than pre intervention. This study is in agreement with ***(Mohamed et al., 2012)*** who studied perspectives of

women related to the quality of nursing care provided after delivery in Maternity Hospital of Ain Shams Cairo, Egypt, and found that nearly two thirds of women were observed their vital signs by nurse. After implementation of teaching strategy (booklet), there was a statistical significant improvement in all items of measuring vital signs like temperature, pulse, blood pressure and respiration.

As regards to physical assessment the findings of this study revealed that it had improvement post implemented guideline than pre intervention. These results were in disagreement with the study done by ***(Elander et al., 2009)*** which reported that the responsibility of nurses that help to decrease pain include comfort measures such as changing the position of patient and straightening bed linen.

After implementation of a teaching strategy there was no significant improvement in doing complete head to toe physical assessment as they didn't had the knowledge and time to do it. These differences can be explained by differences of setting and qualifications of working nurses.

As regards assessing the wound for signs of infection such as increasing pain, redness and discharge and assessing signs of bleeding and wound separation the findings of this study revealed that it had improvement post implemented guideline than pre intervention. These findings were in agreement with ***(Moustafa et al., 2013)*** who found that evaluating the dressing every shift is done accurately all of them in both hospitals Assuit University Hospital and King Fahd hospital in Gizan.

As regards assessing IV site for appearances and patency initially and every two hours the findings of this study revealed that it had improvement post implemented guideline than pre intervention. This result was in agreement with ***(Ingalls & Salerno, 2009)*** who reported that intravenous solutions must be carefully monitored to prevent giving it all slowly or rapidly. After implementation of a teaching strategy there was significant improvement in assessing IV site for appearance and patency.

As regarding encouraging early mobilization when women's sensation returns to normal the findings of this study revealed that it had improvement post implemented guideline than pre intervention. These findings were in agreement with ***(Moustafa et al., 2013)*** who found that encouraging women for early ambulation was done accurately all of them in both hospitals King Fahd hospital in Gizan and Assuit University Hospital. After implementation of a teaching strategy there was significant improvement in sitting the woman out of bed

As regards encouraging skin to skin contact between woman & newborn the findings of this study revealed that it had improvement post implemented guideline than pre intervention. These findings is in disagreement with a study done by ***(Tapiwa & Alepile, 2011)*** who assess the quality of care given during the postpartum period in Northern Botswana and found that more than three quarter of study subjects kept newborn in skin to skin contact with the mother.

After implementation of a teaching strategy there was no significant improvement in encouraging skin to skin contact between woman & newborn .These differences can be explained by differences in methodology.

While after implementation of guideline regarding care of CS the finding of this study revealed that there more than three quarter of the studied sample had correct practice at immediate & post intervention compared to pre. This finding is inconsistent with ***(Chaudhary et al., 2015)*** who stated that the majority of staff nurses had good practice about overall cesarean section care. After implementation of the guideline most of the studied items of care were obviously and significantly improved in comparison with the findings before implementation of the educational sessions. This may be due to the immediate effect of the guideline sessions supported by the provided booklet about cesarean section care which was helpful as ongoing reference. This study finding is consistent with ***(Gaheen et al., 2016)*** that had evaluated the effect of clinical guideline on nursing students' practical achievements and indicated a higher clinical performance post implementation of guideline.

This present finding was agreed with study finding by ***(maged T, 2017 & Lin, 2013)*** were found that there was significant improvement of nurses practice post intervention than pre intervention. The decreased nurses' practical skills after one month may due to lack of refreshing courses; in-service training programs while may enhance nurses' practical skills at maternity units.

This present study finding agreed with ***(Mekinen, 2010)*** who found that utilized guideline was a highly significant improved nurses practical skills post intervention.

Regarding to the nurses' satisfaction about clinical guidelines for cesarean section the finding of this study revealed that the majority of the studied sample was satisfied by guidelines sessions. ***Chaudhary et al., (2015)*** supporting the present study finding, by evaluating the effect of clinical guideline on baccalaureate nursing students' satisfaction and reporting that the students nurses were very satisfied with the simulation learning.

These findings supported and validated the developed guidelines regarding care of mothers with CS and ensure that the guidelines were clear, simple, organized, reliable and applicable and strengthen utilization of such guidelines in future.

Regarding to The correlation between the total knowledge and general characteristics data among the studied sample regarding cesarean section care in the present study revealed that, there was highly statistically significant relation between nurses' total knowledge score and between their years of experience because they were more involved and more responsible for provide care for mothers with CS immediately and one month post guideline implementation.

Also, there was statistically significant relation between knowledge about nursing care for cesarean section of the studied sample and age and education level.

This study finding is compatible with the finding of ***Ibrahim (2016)*** who disclosed a positive statistically significant correlation between nurses' total knowledge score and their educational level.

Also, the current study findings were disagreed with ***(Jaber, 2011)*** who reported that there was no significant difference between general characteristics and nurse knowledge post intervention. This contrary between both studies may be due to differentiation of nurses' general characteristics.

The present finding is in consistent with ***(Abdel-Menim et al., 2016)*** who found positive statistically significant correlation between the studied sample's knowledge score and their educational level. Also the present finding is in harmony with ***Abd Elfattah, (2012)*** which was a statistically significant relation between nurses' knowledge & their ages & years of experience. This means that nurses' level of knowledge is better with old ages and years of experience. Obvious improvements of total nurses' knowledge as well as performance scores were documented with significant statistically differences regarding immediate postpartum care immediately and one month post guideline compared to pre.

In relation to correlation between the total practice and general characteristics data among the studied sample regarding post cesarean section care, the present study revealed that, there was also highly statistically significant relation between nurses' total practice score about nursing care for caesarean section of the studied sample and their age, years of experience immediately and one month post guideline implementation than pre. Also, there was statistically significant relation between total practice about nursing care for caesarean section of the studied sample and their education level.

The present finding is agree with ***(Ibrahim, 2016)*** which was a statistically significant relation between nurses' practice & their ages & years of experience. This means that nurses' level of practices is better with old ages and years of experience. Obvious improvements of total nurses' practice as well as performance scores were documented with significant statistically differences regarding immediate postpartum care immediately and one month post guideline compared to pre.

These current findings weren't coincided with findings reported by ***(Jaber, 2011)*** who indicated that there was no significant difference in practice between nurses with their general characteristics (age, years of experience) but there was a highly significant difference with nurses' practical skills and different qualifications only.

The correlation between total practice score total score, total knowledge, and the total satisfaction score was also evaluated in the present study and revealed that there was a positive correlation between total knowledge about nursing care for the caesarean section, satisfaction about clinical guideline of the studied sample, and their total practice about nursing care for cesarean section at the post of intervention. It was evident from present study findings that improved nurses'

correct knowledge was consequently reflected upon their improved nurses' practical skills & finally on nurses' satisfaction.

This finding agreed with **(shahin,2012)** & **(taha,2014)** who stated that a statistically significant correlation between nurses' scores of knowledge and their practice in pre-program, post-program after 3 months following the instructional program. This strong correlation between nurses' knowledge and practice was highly expectable; these may be due to the gain knowledge; due to guideline which was reflected appoint nurse practical skills.

The findings of the present study had pointed out our attention toward the importance of implementing guidelines in enhancing studied sample knowledge and practice among patients undergoing cesarean section. These findings had consequently reflected upon studied sample satisfaction regarding the implemented guideline related to utilization present study guideline.

The present study finding concluded as the following:

A highly significantly improvement between post intervention compared to pre-intervention regarding nurses knowledge and practices related to utilization of an instructional supportive nursing guideline. It was also observed that a high level of satisfaction among nurses post intervention regarding utilization of a clinical guideline due to easily guideline content, teaching methods, organized setting, sessions covered the content and helped them in care provided. Also the research hypothesis was answered through present study research findings. **The finding of this study projected the following recommendations:**

- Periodic refreshing courses regarding caesarean section care.
- Dissemination of the present study research findings to all maternity health services all over Cairo.
- In-service training program should be done periodically for nurses regarding caesarean section .
- Further research is recommended the present study guideline to be applied on another setting on larger sample.

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